

Listing of Claims:

1. (Previously Presented) Automatic sample collector for chronological deposition of liquids having

a plurality of collection containers arranged in series, each connected to a supply line through a liquid inlet,

a supply liquid barrier located in the supply line after each liquid inlet that is gas-permeable in dry condition and becomes permeable to liquids after contact with the liquid and after a defined pressure difference thereover is exceeded and on the basis of wetting resistances, and

a second gas-permeable liquid barrier on the basis of wetting resistances being integrated into the collection container for preventing the inflow to the collection container through the liquid inlet after the collection container has been filled, wherein the collapse of said second gas-permeable liquid barrier requires a greater pressure difference thereover than the collapse of the supply liquid barrier.

2. (Previously Presented) Automatic sample collector in accordance with Claim 1, wherein

the gas-permeable liquid barrier is connected directly to the atmosphere or is integrated into a gas discharge.

3. (Previously Presented) Automatic sample collector in accordance with Claim 1, wherein

each gas discharge is connected to the supply line and the supply liquid barrier is arranged between the liquid inlet and the gas discharge of the collection container.

4. (Previously Presented) Automatic sample collector in accordance with claim 1, wherein the collection container is connected to a gas discharge that is not connected to the supply line but rather in another way to the atmosphere or another larger closed space.

5. (Previously Presented) Automatic sample collector according to claim 1, wherein the collection containers can be detached from the supply line.
6. (Previously Presented) Automatic sample collector in accordance with claim 1, wherein
 - a delivery apparatus in form of a pump, suction apparatus or a valve is integrated in the supply line, and
 - wherein the supply line comprises a pressure sensor, and
 - a controller is configured to control the delivery apparatus or the valve in order to interrupt the liquid flow by switching off the pump or the valve as a result of the change in pressure on the collapse of the gas-permeable liquid barrier, and in order to resume the flow.
7. (Previously Presented) Automatic sample collector in accordance with claim 1, characterized in that the collection containers can be detached from the supply line.
8. (Previously Presented) Automatic sample collector in accordance with claim 1, characterized in that a delivery apparatus in form of a pump or suction apparatus is integrated in the supply line.
9. (Previously Presented) Automatic sample collector in accordance with claim 1, characterized in that a valve is integrated in the supply line.
10. (Previously Presented) Automatic sample collector in accordance with claim 1, characterized in that the supply line comprises a pressure sensor.
11. (Previously Presented) Automatic sample collector in accordance with claim 8, characterized in that a control is arranged for the delivery apparatus or the valve.

12. (Previously Presented) Automatic sample collector in accordance with claim 1, wherein gas-filled cavities of the sample collector contain a protective gas.
13. (Previously Presented) Automatic sample collector in accordance with claim 1, characterized in that a cooling apparatus, for the collection containers is integrated in the sample collector.
14. (Previously Presented) Automatic sample collector in accordance with claim 1, characterized in that an apparatus that prevents the flow in the liquid inlet after the filling the collection container is developed as cryostat which maintains the temperature of the liquid in the supply line above the freezing point and the temperature in the collection containers below the freezing point of the liquid to be collected.
15. (Previously Presented) Method extracting a sample from a flow of liquid, comprising
- guiding the liquid in a supply line of a sample collector to a gas-permeable liquid barrier on the basis of wetting resistances and which becomes permeable to liquids after contact with the liquid and after a defined pressure difference thereover is exceeded and guiding the liquid via a liquid inlet that branches off from the supply line upstream of the gas-permeable liquid barrier and runs into a collection container,
 - then filling said liquid into the collection container through the liquid inlet,
 - then interrupting the feed-in of the liquid through the liquid inlet by a second gas permeable liquid barrier on the basis of wetting resistances, wherein collapsing the second gas-permeable liquid barrier requires a greater pressure difference thereover than collapsing the supply liquid barrier,
 - the second gas-permeable liquid barrier being integrated into the collection container, whereupon
 - a pressure in the collection container increases,
 - the liquid barrier is permeated after a defined pressure difference thereupon is exceeded and
 - the liquid continues to flow through the supply line.

16. (Previously Presented) Method in accordance with claim 15, comprising measuring the pressure difference between the liquid in the supply line and a reference pressure using
- the increase of pressure in the supply line after filling a sample container, or
- the decrease of said pressure after collapse of the liquid barrier as a signal to interrupt the feed-in of the liquid in the supply line with the help of a valve or a controllable pump.
17. (Previously Presented) Method in accordance with claim 16, further comprising after interruption, automatically or manually resuming the feed-in of liquid at a defined time by the controlling a valve or a delivery apparatus.
18. (Previously Presented) Method in accordance with claim 15 wherein removal of a plurality of samples is a chronological deposit of liquid samples from a flow of liquid without using movable parts and without an external energy source.
19. (Previously Presented) Method in accordance with claim 15 wherein removal of a plurality of samples is a chronological deposit of liquid fractions under water or in a protective gas atmosphere.
20. (Previously Presented) Method in accordance with claim 15 further comprising chronologically freezing liquid samples.
21. (Previously Presented) Method in accordance with claim 15 wherein removal of a sample is from a chromatography column, an electrophoresis apparatus, a reaction container, a culture container, a fermenter, a body of water, the ground of a body of water, the ground, a vegetable, or animal or human tissue or organ.

22. (Canceled)
23. (Canceled)
24. (Withdrawn - Previously Presented) Automatic sample collector for chronological deposition of liquids having
a plurality of collection containers arranged in series, each connected to a supply line through a liquid inlet,
a supply liquid barrier on the basis of wetting resistances that is gas-permeable in dry condition and becomes permeable to liquids after contact with the liquid and after a defined pressure difference thereover is exceeded located in the supply line after each liquid inlet, and
a cooling apparatus for stopping a liquid flow, which prevents any additional inflow to the collection container through the associated liquid inlet after the collection container has been filled.
25. (Withdrawn - Previously Presented) Automatic sample collector in accordance with claim 24, wherein the cooling apparatus is a cryostat which maintains the temperature of the liquid in the supply line above the freezing point and the temperature in the collection container below the freezing point of the liquid to be collected.
26. (Withdrawn - Previously Presented) Automatic sample collector in accordance with claim 24, wherein
a delivery apparatus in form of a pump, suction apparatus, or valve is integrated in the supply line, and
wherein the supply line further comprises a pressure sensor, and
wherein a controller is configured to control the delivery apparatus or the valve in order to interrupt the liquid flow by switching off the pump or the valve as a result of the change in pressure on the collapse of the gas-permeable liquid barrier, and in order to resume the flow.

27. (Withdrawn - Previously Presented) Method for the extraction of a sample from a flow of liquid, comprising

guiding the liquid in a supply line of a sample collector to a gas permeable liquid barrier, which functions on the basis of wetting resistances and which becomes permeable to liquids after contact with the liquid and after a defined pressure difference thereover is exceeded and guiding the liquid via a liquid inlet that branches off from the supply line upstream of the gas-permeable liquid barrier into a collection container,
then filling said liquid into the collection container through the liquid inlet,
then interrupting the feed-in of the liquid through the liquid inlet through a device for stopping the liquid flow realized as a cooling apparatus, whereupon a pressure in the collection container increases,
the liquid barrier is permeated after the exceed of a defined pressure difference thereupon and
the liquid continues to flow through the supply line.

28. (Withdrawn - Previously Presented) Method in accordance with claim 27, further comprising

measuring the pressure difference between the liquid in the supply line and a reference pressure and
using the increase of pressure in the supply line after filling a sample container or the decrease of said pressure after collapse of the liquid barrier as a signal to interrupt the feed-in of the liquid in the supply line with the help of a valve, or a controllable pump.

29. (Previously Presented) Automatic sample collector for chronological deposition of liquids having

a plurality of collection containers arranged in series, each connected to a supply line through a liquid inlet,
a supply liquid barrier located in the supply line after each liquid inlet that is gas-permeable in dry condition and becomes permeable to liquids after

contact with the liquid and after a defined pressure difference thereover is exceeded and on the basis of wetting resistances, and
a means for preventing inflow to the collection container.